

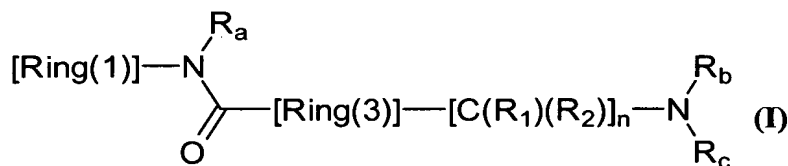
# Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

## Listing of Claims:

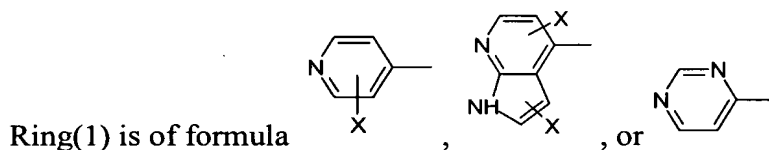
1. – 31. (Cancelled)

32. (New) A compound according to formula I:



wherein

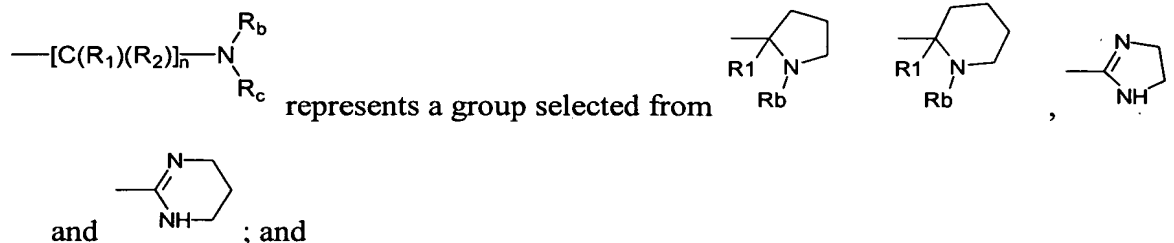
n is 1;



wherein -X may be absent or denotes substitution with 1-4 substituents X that are independently chosen from halogen, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, substituted or unsubstituted aryl, nitro, hydroxyl and a substituted or unsubstituted amino group;

Ring(3) is a 1,3-phenylene, 1,4-phenylene, 1,3-cyclohexylene, or 1,4-cyclohexylene optionally substituted with 1-4 substituents that are independently selected from halogen, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, substituted or unsubstituted aryl, nitro, hydroxyl, an amino group;

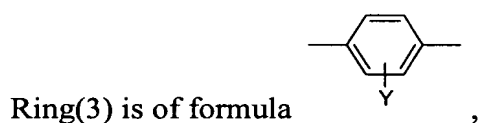
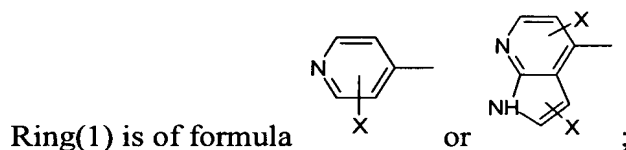
R<sub>a</sub> is hydrogen; a linear or branched, optionally substituted C<sub>1</sub>-C<sub>6</sub>-alkyl; a linear or branched, optionally substituted C<sub>1</sub>-C<sub>6</sub>-alkoxy; or an optionally substituted aryl;



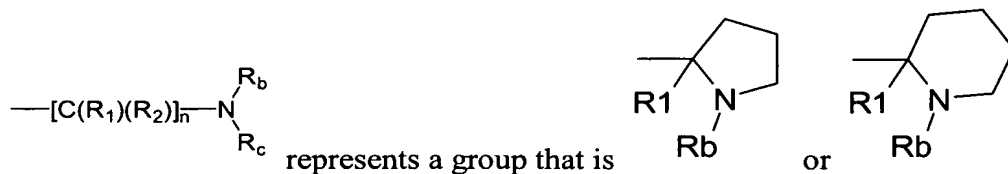
$R_1$  is selected from the group consisting of hydrogen; a substituted or unsubstituted, saturated, unsaturated or aromatic 3-, 4-, 5-, 6-, 7- or 8-membered ring containing carbon atoms and optionally one or two heteroatoms; substituted or unsubstituted  $C_1$ - $C_6$  alkyl and cyano,

or a salt, pharmaceutically acceptable salt, pharmaceutically acceptable prodrug, tautomer, isomer, and/or stereochemical isomer thereof.

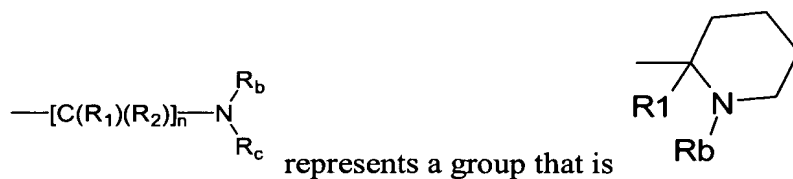
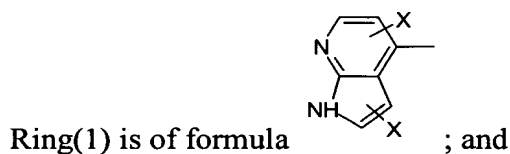
33. (New) The compound according to claim 32, wherein



wherein -Y may be absent or denotes substitution with 1-4 substituents Y that are independently chosen from halogen,  $C_1$ - $C_6$  alkyl,  $C_1$ - $C_6$  alkoxy, substituted or unsubstituted aryl, nitro, hydroxyl, and an amino group; and



34. (New) The compound according to claim 33, wherein



35. (New) The compound according to claim 34, wherein X denotes substitution with 1 or 2 substituents X.

36. (New) The compound according to claim 35, wherein -Y denotes substitution with 1 or 2 substituents Y.

37. (New) A compound selected from the group consisting of

N-pyridin-4-yl-4-pyrrolidin-2-yl-benzamide;

4-piperidin-2-yl-N-pyridin-4-yl-benzamide;

1,2,3,4-tetrahydro-isoquinoline-6-carboxylic acid pyridin-4-yl-amide;

4-(4,5-dihydro-1H-imidazol-2-yl)-N-pyridin-4-yl-benzamide;

N-pyridin-4-yl-4-(1,4,5,6-tetrahydro-1H-pyrimidin-2-yl)-benzamide;

4-(1-amino-phenyl-methyl)-N- pyridin-4-yl-benzamide;

4-[1-amino- (4-fluorophenyl)-methyl]-N-pyridin-4-yl-benzamide;

4-[1-amino-(4-methoxyphenyl)-methyl]-N-pyridin-4-yl-benzamide;

4-(1-amino-ethyl)-naphthalene-1-carboxylic acid pyridin-4-ylamide;

4-aminomethyl-2,5-dimethyl-N-pyridin-4-yl-benzamide;

4-(1-amino-ethyl)-N-(1H-pyrrolo[2,3-b]pyridin-4-yl)-benzamide;

4-(1-amino-cyclopentyl-ethyl)-N-(1H-pyrrolo [2,3-b] pyridin-4-yl)- benzamide;

1,2,3,4-tetrahydro-isoquinoline-6-carboxylicacid-N (1H pyrrolo [2,3-b] pyridin-4-yl)-benzamide;

4-piperidin-2-yl-N-(1H-pyrrolo [2,3-b]pyridin-4-yl)- benzamide;

4-(1-amino-cyclobutyl-ethyl)-N-pyridin-4-yl-benzamide;

4-(1-amino-2,2-dimethyl-butyl)-N-pyridin-4-yl-benzamide;

1-amino-indan-5-carboxylic acid pyridin-4-yl-amide;

4-(1-amino-butyl)-N-pyridin-4-yl-benzamide;

4-(1-amino-pentyl)-N-pyridin-4-yl-benzamide;

4-(1-amino-2-methyl-propyl)-N-pyridin-4-yl-benzamide;

4-(1-amino-2, 2-dimethyl-propyl)-N-pyridin-4-yl-benzamide;

4-(1-amino-propyl)-N-(1H-pyrrolo[2,3-b]pyridin-4-yl)-benzamide;

4-(1-amino-cyclopropyl-ethyl)-N(1H-pyrrolo[2,3-b]pyridin-4-yl)-benzamide;

4-(1-amino-cyclobutyl-ethyl)-N-(1H-pyrrolo[2,3-b]pyridin-4-yl)-benzamide;

**4-(1-amino-2,2-dimethyl-butyl)-N-(1H-pyrrolo[2,3-b]pyridin-4-yl)-benzamide;**

1-amino-indan-5-carboxylic acid(1H-pyrrolo[2,3-b]pyridin-4-yl)-amide;

5-amino-5,6,7,8-tetrahydro-naphthalene-2-carboxylic acid (1H-pyrrolo[2,3-b]pyridin-4-yl)-amide;

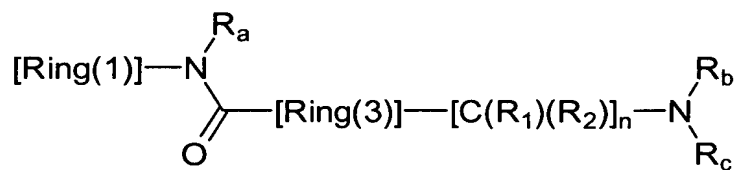
4-(1-amino-butyl)-N-(1H-pyrrolo[2,3-b]pyridin-4-yl)-benzamide;

4- (1-amino-2,2-dimethyl-propyl)-N-(1H-pyrrolo[2,3-b] pyridin-4-yl)-benzamide; and

or salt, pharmaceutically acceptable salt, pharmaceutically acceptable prodrug, tautomer, isomer, and/or stereochemical isomer thereof.

38. (New) A pharmaceutical composition comprising a therapeutically effective amount of a compound according to claim 32 and a pharmaceutically acceptable carrier, diluent, excipient, and/or adjuvant.

39. (New) A method for the treatment or prevention of a metabolic disease or disorder, or complications and/or symptoms thereof, in a mammal, comprising administering to the mammal a therapeutically effective amount of a compound according to the following formula, or a salt or prodrug thereof:



wherein

Ring(1) is a substituted or unsubstituted, saturated, unsaturated or aromatic 4-, 5-, 6-, 7-, or 8-membered ring containing carbon atoms and at least one hydrogen-accepting heteroatom and optionally 1 or 2 further heteroatoms;

R<sub>a</sub> is a hydrogen or a linear or branched, substituted or unsubstituted C<sub>1</sub>-C<sub>6</sub> alkyl, substituted or unsubstituted C<sub>1</sub>-C<sub>6</sub> alkoxy or substituted or unsubstituted aryl;

Ring(3) is a substituted or unsubstituted, saturated, unsaturated or aromatic 4-, 5-, 6-, 7-, or 8-membered ring containing carbon atoms and optionally 1 or 2 further heteroatoms;

each R<sub>1</sub> or R<sub>2</sub> may be the same or different and is independently selected from the group consisting of hydrogen, a substituted or unsubstituted, saturated, unsaturated or aromatic 3-, 4-, 5-, 6-, 7- or 8-membered ring containing carbon atoms and optionally one or two heteroatoms, substituted or unsubstituted C<sub>1</sub>-C<sub>6</sub> alkyl or cyano;

n is 0, 1, or 2; and

R<sub>b</sub> and R<sub>c</sub> are such that the amino group -NR<sub>b</sub>R<sub>c</sub> is essentially in a protonated form at a pH between 5.0-9.0;

and wherein

- (1) the group R<sub>a</sub>, the nitrogen atom to which group R<sub>a</sub> is bound, the carbon atom of Ring(1) to which the N-R<sub>a</sub> nitrogen atom is bound, and one carbon atom of Ring(1) adjacent to the carbon atom of Ring(1) to which the N-R<sub>a</sub> nitrogen atom is bound may form Ring(7) wherein Ring(7) is a substituted or unsubstituted, saturated, unsaturated or aromatic 4-, 5-, or 6-membered ring that contains carbon atoms, the N-R<sub>a</sub> nitrogen atom and optionally one further heteroatom chosen from oxygen, sulfur, and nitrogen;
- (2) where Ring(3) is a 1,4-phenylene group, one of R<sub>1</sub> and R<sub>2</sub>, the carbon atom to which R<sub>1</sub> and R<sub>2</sub> are bound and two of the carbon atoms belonging to the 1,4-phenylene group may form a substituted or unsubstituted 5-, 6-, 7-, or 8-membered ring that contains carbon atoms, the nitrogen atom of the amino group NR<sub>b</sub>R<sub>c</sub> and optionally one further heteroatom chosen from oxygen, sulfur, and nitrogen and that may be saturated or contain one double bond;

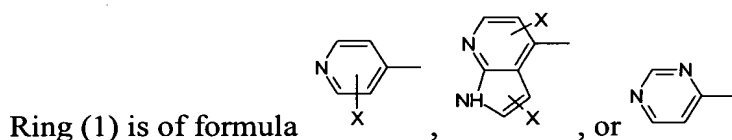
- (3) where Ring(3) is a 1,4-phenylene group, one of  $R_b$  or  $R_c$ , the nitrogen atom to which  $R_b$  or  $R_c$  are bound, the carbon atom to which  $R_1$  or  $R_2$  are bound and two of the carbon atoms belonging to the 1,4-phenylene group may form a substituted or unsubstituted 5-, 6-, 7-, or 8-membered ring that contains carbon atoms, the nitrogen atom of the amino group  $NR_bR_c$  and optionally one further heteroatom chosen from oxygen, sulfur, and nitrogen and that may be saturated or contain one double bond;
- (4) one of  $R_b$  and  $R_c$  may, together with the nitrogen atom of the amino group  $NR_bR_c$ , one of  $R_1$  and  $R_2$  and the carbon atom to which  $R_1$  and  $R_2$  are bound, form a substituted or unsubstituted 5-, 6-, 7-, or 8-membered ring that contains carbon atoms, the nitrogen atom of the amino group  $NR_bR_c$  and optionally one further heteroatom chosen from oxygen, sulfur, and nitrogen and that may be saturated or contain one double bond;
- (5)  $R_b$ ,  $R_c$  and the nitrogen atom to which they are bound may together form a substituted or unsubstituted ring with between 3 and 10 atoms in the ring, including the nitrogen atom to which both  $R_a$  and  $R_b$  are bound, so that the ring so formed consists of a nitrogen atom, carbon atoms and optionally one further heteroatom chose from oxygen, nitrogen, and sulfur;

and wherein

the distance between the at least one hydrogen-accepting heteroatom in Ring(1) and the  $NR_aR_b$  nitrogen atom, as determined using a Scatter Plot, is in the range of 11.0 to 11.8 Angstroms.

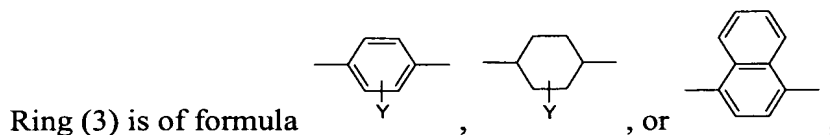
40. (New) The method according to claim 39, wherein the disease or disorder is selected from the group consisting of hyperglycemia, hyperinsulinemia, hyperlipidemia, and insulin-resistant diabetes, lipoatrophies, and obesity.

41. (New) The method according to claim 39, wherein the disease or disorder is selected from the group consisting of conditions and/or diseases that are primarily associated with the response or sensitivity to insulin,
42. (New) The method according to claim 39, wherein the disease or disorder is selected from the group consisting of Type I and Type II diabetes, severe insulin resistance, Mendenhall's Syndrome, Werner Syndrome, leprechaunism, lipotrophic diabetes, hypertension, osteoporosis and lipodystrophy.
43. (New) The method according to claim 39, wherein the disease or disorder is Type II diabetes, or a complication or symptom associated therewith.
44. (New) The method according to claim 39, wherein the disease or disorder is obesity, or a complication or symptom associated therewith.
45. (New) The method according to claim 39, wherein



wherein -X may be absent or denotes substitution with 1-4 substituents X that are independently chosen from halogen, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, substituted or unsubstituted aryl, nitro, hydroxyl and a substituted or unsubstituted amino group,

R<sub>a</sub> is a hydrogen;

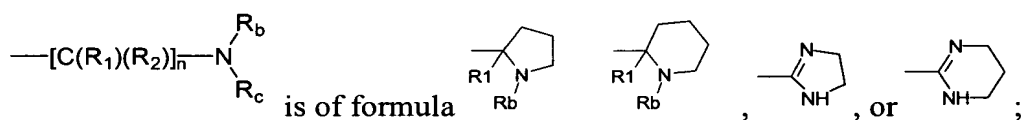


wherein-Y may be absent or denotes substitution with 1-4 substituents Y that are independently chosen from halogen, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, substituted or unsubstituted aryl, nitro, hydroxyl and an amino group,

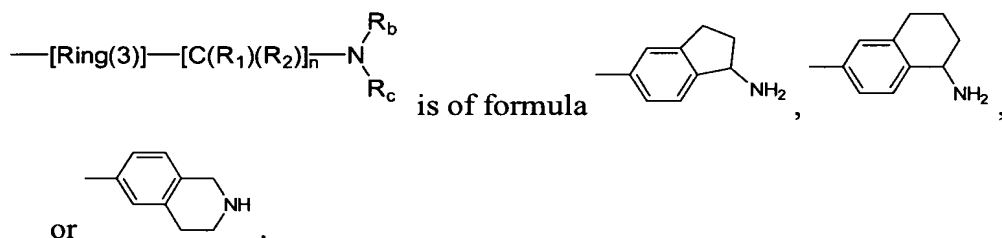


each  $R_1$  or  $R_2$ , may be the same or different, and is independently selected from the group consisting of hydrogen, a substituted or unsubstituted, saturated, unsaturated or aromatic 3-, 4-, 5-, 6-, 7- or 8-membered ring containing carbon atoms and optionally one or two heteroatoms, substituted or unsubstituted  $C_1$ - $C_6$  alkyl or cyano;  $n$  is 1; and  $R_b$  and  $R_c$  are each independently hydrogen;

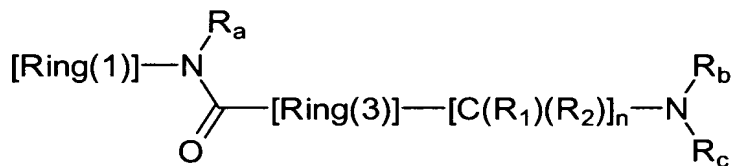
or



or wherein:



46. (New) A method for inhibition of the activity of at least one kinase, comprising contacting said kinase with a compound according to the following formula, or a salt or prodrug thereof:



wherein

Ring(1) is a substituted or unsubstituted, saturated, unsaturated or aromatic 4-, 5-, 6-, 7-, or 8-membered ring containing carbon atoms and at least one hydrogen-accepting heteroatom and optionally 1 or 2 further heteroatoms;

R<sub>a</sub> is a hydrogen or a linear or branched, substituted or unsubstituted C<sub>1</sub>-C<sub>6</sub> alkyl, substituted or unsubstituted C<sub>1</sub>-C<sub>6</sub> alkoxy or substituted or unsubstituted aryl;

Ring(3) is a substituted or unsubstituted, saturated, unsaturated or aromatic 4-, 5-, 6-, 7-, or 8-membered ring containing carbon atoms and optionally 1 or 2 further heteroatoms;

each R<sub>1</sub> or R<sub>2</sub> may be the same or different and is independently selected from the group consisting of hydrogen, a substituted or unsubstituted, saturated, unsaturated or aromatic 3-, 4-, 5-, 6-, 7- or 8-membered ring containing carbon atoms and optionally one or two heteroatoms, substituted or unsubstituted C<sub>1</sub>-C<sub>6</sub> alkyl or cyano;

n is 0, 1, or 2; and

R<sub>b</sub> and R<sub>c</sub> are such that the amino group -NR<sub>b</sub>R<sub>c</sub> is essentially in a protonated form at a pH between 5.0-9.0;

and wherein

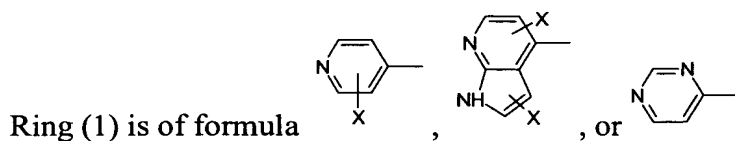
- (1) the group R<sub>a</sub>, the nitrogen atom to which group R<sub>a</sub> is bound, the carbon atom of Ring(1) to which the N-R<sub>a</sub> nitrogen atom is bound, and one carbon atom of Ring(1) adjacent to the carbon atom of Ring(1) to which the N-R<sub>a</sub> nitrogen atom is bound may form Ring(7) wherein Ring(7) is a substituted or unsubstituted, saturated, unsaturated or aromatic 4-, 5-, or 6-membered ring that contains carbon atoms, the N-R<sub>a</sub> nitrogen atom and optionally one further heteroatom chosen from oxygen, sulfur, and nitrogen;
- (2) where Ring(3) is a 1,4-phenylene group, one of R<sub>1</sub> and R<sub>2</sub>, the carbon atom to which R<sub>1</sub> and R<sub>2</sub> are bound and two of the carbon atoms belonging to the 1,4-phenylene group may form a substituted or unsubstituted 5-, 6-, 7-, or 8-membered ring that contains carbon atoms, the nitrogen atom of the amino group NR<sub>b</sub>R<sub>c</sub> and optionally one further heteroatom chosen from oxygen, sulfur, and nitrogen and that may be saturated or contain one double bond;

- (3) where Ring(3) is a 1,4-phenylene group, one of R<sub>b</sub> or R<sub>c</sub>, the nitrogen atom to which R<sub>b</sub> or R<sub>c</sub> are bound, the carbon atom to which R<sub>1</sub> or R<sub>2</sub> are bound and two of the carbon atoms belonging to the 1,4-phenylene group may form a substituted or unsubstituted 5-, 6-, 7-, or 8-membered ring that contains carbon atoms, the nitrogen atom of the amino group NR<sub>b</sub>R<sub>c</sub> and optionally one further heteroatom chosen from oxygen, sulfur, and nitrogen and that may be saturated or contain one double bond;
- (4) one of R<sub>b</sub> and R<sub>c</sub> may, together with the nitrogen atom of the amino group NR<sub>b</sub>R<sub>c</sub>, one of R<sub>1</sub> and R<sub>2</sub> and the carbon atom to which R<sub>1</sub> and R<sub>2</sub> are bound, form a substituted or unsubstituted 5-, 6-, 7-, or 8-membered ring that contains carbon atoms, the nitrogen atom of the amino group NR<sub>b</sub>R<sub>c</sub> and optionally one further heteroatom chosen from oxygen, sulfur, and nitrogen and that may be saturated or contain one double bond;
- (5) R<sub>b</sub>, R<sub>c</sub> and the nitrogen atom to which they are bound may together form a substituted or unsubstituted ring with between 3 and 10 atoms in the ring, including the nitrogen atom to which both R<sub>a</sub> and R<sub>b</sub> are bound, so that the ring so formed consists of a nitrogen atom, carbon atoms and optionally one further heteroatom chose from oxygen, nitrogen, and sulfur;

and wherein

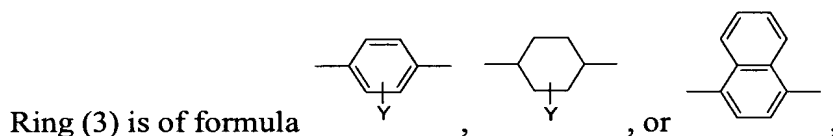
the distance between the at least one hydrogen-accepting heteroatom in Ring(1) and the NR<sub>a</sub>R<sub>b</sub> nitrogen atom, as determined using a Scatter Plot, is in the range of 11.0 to 11.8 Angstroms..

47. (New) The method according to claim 46, wherein the inhibition is *in vivo*.
48. (New) The method according to claim 46, wherein the inhibition is *in vitro*.
49. (New) The method according to claim 46, wherein



wherein -X may be absent or denotes substitution with 1-4 substituents X that are independently chosen from halogen, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, substituted or unsubstituted aryl, nitro, hydroxyl and a substituted or unsubstituted amino group,

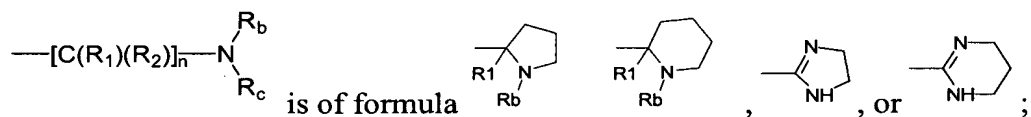
R<sub>a</sub> is a hydrogen;



wherein-Y may be absent or denotes substitution with 1-4 substituents Y that are independently chosen from halogen, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, substituted or unsubstituted aryl, nitro, hydroxyl and an amino group,

each R<sub>1</sub> or R<sub>2</sub>, may be the same or different, and is independently selected from the group consisting of hydrogen, a substituted or unsubstituted, saturated, unsaturated or aromatic 3-, 4-, 5-, 6-, 7- or 8-membered ring containing carbon atoms and optionally one or two heteroatoms, substituted or unsubstituted C<sub>1</sub>-C<sub>6</sub> alkyl or cyano; n is 1; and R<sub>b</sub> and R<sub>c</sub> are each independently hydrogen;

or



or wherein:

